



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## Studies in the Agalinanae, a subtribe of the Rhinanthaceae\*

FRANCIS W. PENNELL

### II. SPECIES OF THE ATLANTIC COASTAL PLAIN

Following a survey of the nomenclatural history of the group of Rhinanthaceous plants, which we would term for convenience the Agalinanae, there should properly come some comparative morphological study of the several genera. It has seemed advisable, however, to defer such for the present, in order first to present the results of a season's field-study of the group in the Coastal Plain of the South Atlantic and East Gulf states.

The present paper includes a revision of the species known to occur in the Atlantic Coastal Plain from New Jersey to eastern Louisiana. The flora of the northward extension of this area—Long Island and southeastern Massachusetts—has not been included, as this region is so narrow and broken, and the Coastal Plain flora so attenuated, as scarcely to make such inclusion desirable. From New Jersey southward and westward to central Alabama the Fall Line has been followed as the natural inland boundary. But toward the west instead of turning northward to include the lower Mississippi Valley, an arbitrary line has been drawn on the 33d parallel to the Mississippi River, the western limit of this study. It is believed that while sufficiently diverse the flora of the region included has so much in common, and so much in contrast to the districts northward and westward as to warrant a special consideration.

Four genera of Agalinanae occur within this area. Of these *Macranthera* is monotypic and wholly restricted to this region, *Afzelia* with two species east of the Mississippi River is nearly so restricted, *Aureolaria*, primarily a genus of the Appalachian district, has several species adapted to this region, while *Agalinis*, the largest genus, here reaches its greatest diversity and abundance.

---

\* Contribution from the Botanical Laboratory of the University of Pennsylvania.

In the late summer and early autumn of 1912, I was able to spend over two months in field-study of this group, and the following itinerary indicates the more important points in the Coastal Plain where collections were made:

Abita Springs, St. Tammany Parish, Louisiana.....	August 11-19
Catalpa, West Feliciana Parish, Louisiana.....	" 20-26
Biloxi, Harrison Co., Mississippi.....	" 27-29
Theodore, Mobile Co., Alabama.....	August 30-Sept. 4
Mobile, Mobile Co., Alabama.....	Sept. 5
Bay Minette, Baldwin Co., Alabama.....	" 6-8
Milton, Santa Rosa Co., Florida.....	" 9
Milligan, Santa Rosa Co., Florida.....	" 10
Floral, Covington Co., Alabama.....	" 11-15
Chipley, Washington Co., Florida.....	" 16-18
Apalachicola, Franklin Co., Florida.....	" 19-21
Tallahassee, Leon Co., Florida.....	" 22-24
St. Marks, Wakulla Co., Florida.....	" 25-26
Monticello, Jefferson Co., Florida.....	" 27
Thomasville, Thomas Co., Georgia.....	" 28-30
Valdosta, Lowndes Co., Georgia.....	Oct. 1
Cordele, Crisp Co., Georgia.....	" 2-4
Douglas, Coffee Co., Georgia.....	" 4
Waycross, Ware Co., Georgia.....	" 5-6
Jacksonville, Duval Co., Florida.....	" 7-8
Brunswick, Glynn Co., Georgia.....	" 9-10
Charleston, Charleston Co., South Carolina.....	" 11-13
Monks Corner, Berkeley Co., South Carolina.....	" 14
Wilmington, New Hanover Co., North Carolina.....	" 15-16
Rocky Mount, Nash Co., North Carolina.....	" 17
Weldon, Halifax Co., North Carolina.....	" 18

Altogether about 300 numbers of Agalinanae were collected, and a field-study of each species made. These collections and notes form the basis of this report.

In connection with this material I have also reviewed the specimens from the Coastal Plain in the herbaria of the following institutions: United States National Museum, Missouri Botanical Garden, Field Columbian Museum, Biltmore Herbarium, New York Botanical Garden, Academy of Natural Sciences of Philadelphia, University of Pennsylvania, Charleston Museum, Tulane University, Florida Agricultural College, also in the private herbaria of Dr. E. L. Greene, C. C. Deam and H. H. Bartlett. To the custodians and owners of all of these I am greatly indebted.

Also I am indebted to Dr. N. E. Brown of Kew Gardens, England, for consulting Bentham's types in their collections, portions of three of which were kindly sent me; to Dr. A. B. Rendle of the British Museum for examining Walter's types; and to Dr. C. H. Ostenfeld of Copenhagen, Denmark, for comparing the type of *Gerardia tenuifolia* Vahl.

Of the thirty-four species and subspecies in the following pages, all but one have been seen and studied in the field. This exception, *Agalinis oligophylla*, is a Louisiana species not in flower in August when I was there. All new species here proposed have been seen growing, and compared with allies in their native environment. It has been a matter of no small satisfaction that herbarium material since reviewed has fallen so readily into the species deemed valid in the field.

A word may be said concerning field variation in this group. The one species of *Macranthera* and our two of *Afzelia*, as well as all our species of *Agalinis* seem relatively uniform and constant. Breaks between species in the last are often slight but field-study shows them to be true—I have observed little in this genus to suggest hybridism or pronounced subspecific variation. On the other hand, in *Aureolaria*, especially in the subgenus *Panctenis*, conditions seem much more complicated, and such a species as *Aureolaria pectinata* can be viewed only as composed of a number of strains.

In the following treatment the endeavor is made to include quite fully diagnostic characters in the key, while, to save space, only in the case of new species are specific descriptions given. Full synonymy is included so far as Coastal Plain species are concerned. Type localities are quoted from the original descriptions, and where types have been examined the fact is noted. No types have been found for Rafinesque's species. The type of *Gerardia tenuifolia leptophylla* Benth.\* has not been as yet identified. The flowering and fruiting seasons are from specimens seen, but are necessarily incomplete. North and south the flowering season is about the same for a given species, possibly a little later south. All definiteness in season seems to be lost in southern

---

\*Hook. Comp. Bot. Mag. 1: 174. 1835. "Jacksonville, Louisiana." *G. tenuifolia filiformis* Benth. in DC. Prodr. 10: 518. 1846, is the same plant.

Florida. Distribution notes are made as definite as practicable.\* All localities from which specimens have been seen are listed, and in the case of specimens of my own collecting numbers are given. Of course many specimens have been seen with data too vague for such classification. In the fuller revision of this group upon which the writer is working it is intended more fully to index specimens seen.

In prosecuting this study I have been most deeply indebted to the following three gentlemen: to Mr. Roberts Le Boutillier, of Wayne, Pa., whose generosity enabled me to accomplish the field-work required, to Dr. Roland M. Harper whose knowledge of the flora of the Southeast, most generously imparted, has made my search far more successful than it otherwise could have been, and to Dr. John M. Macfarlane, under whose direction and constant support this study has been made.

#### Key to the coastal plain genera

- Corolla tubular, orange, its base thickened, fleshy, semi-persistent, shriveling and blackening before falling. Filaments equal, long-exserted, pubescent with beaded hairs. Anther-sacs closely parallel, opening their entire length. Capsule ovoid, acuminate, densely and closely pubescent. Seeds winged. 1. *Macranthera*.
- Corolla with inflated throat or spreading lobes, yellow or purple, not fleshy nor semi-persistent. Filaments not long-exserted, pubescence not beaded.
- Corolla nearly rotate, tube short, lobes longer than tube, yellow. Filaments nearly equal, about the length of the corolla-tube; anther-sacs closely parallel, opening by short apical slits. Capsule ovoid, acute. Seeds wingless or winged. 2. *Afzelia*.
- Corolla with inflated throat, tubular-campanulate, lobes much shorter than tube. Filaments didynamous, included; anther-sacs opening their entire length.
- Corolla yellow. Anther-sacs parallel, awned at base. Capsule acute to acuminate. Seeds wingless or winged. 3. *Aureolaria*.

---

\* In summarizing local distribution I have largely adopted the floristic areas outlined in the following publications: W. Stone—Plants of Southern New Jersey—Ann. Rep. New Jersey State Mus. [1910]: 1912; F. Shreve *et al.*—Plant Life of Maryland—Maryland Weather Service 3: 1910; R. M. Harper—Vegetation of the coastal plain—Bull. Torrey Club 37: 405-428, 1910; R. M. Harper—Altamaha Grit Region of Georgia—Ann. New York Acad. Sci. 17: 1. 1906. R. M. Harper—Preliminary Report on Peat—Florida Geol. Surv., Ann. Rep. 3: 199-375. 1911; C. Mohr—Plant Life of Alabama—Contrib. U. S. Nat. Herb. 6. 1901; R. M. Harper—Geographic Report on Forests—Geol. Surv. Alabama Monograph 8. 1913.

Corolla pink or purple. Anther-sacs more or less divergent, obtuse to mucronate-awned at base. Capsule rounded at apex. Seeds wingless. 4. *Agalinis*.

- I. MACRANTHERA "Torr."; Benth. in Hook. Comp. Bot. Mag. 1: 174. 1835-6

One species:

- I. MACRANTHERA FLAMMEA (Bartram) Pennell, Bull. Torrey. Club 40: 124. 1913

*Gerardia flammea* Bartram, Trav. 412. 1791. "Stony gravelly heights" along Tensaw River\* near "Taensa," Alabama. No type specimen known to exist. Identified by Mohr, Plant Life of Alabama, 15. 1901.

*Conradia fuschiioides* Nutt. in Jour. Acad. Nat. Sci. Phila. 7: 88. 1834. No locality given. Type, without data, seen in Herb. Acad. Nat. Sci. Phila.

*Macranthera fuchsiioides* (Nutt.) Benth. in Hook. Comp. Bot. Mag. 1: 174. 1835-6.

*Macranthera Lecontei* Torr. in Ann. Lyc. Nat. Hist. New York 4: 80. pl. 4. 1837. "In dry pine woods on the Alatomaha, in Liberty County, Georgia." Type, without data, seen in Herb. Columbia University.

*Russelia flammea* (Bartram) Raf. New Fl. Am. 2: 71. 1837.

*Flammaria coccinea* Raf. New Fl. Am. 2: 71. 1837. Additional name for *Russelia flammea* (Bartram) Raf.

*Toxopus gymnanthes* Raf. New Fl. Am. 2: 72. 1837. Additional name for *Macranthera Lecontei* Torr.

*Toxopus calycinus* Raf. New Fl. Am. 2: 72. 1837. Additional name for *Macranthera fuchsiioides* (Nutt.) Benth.

*Tomilix bracteata* Raf. New Fl. Am. 2: 72. 1837. Additional name for *Macranthera fuchsiioides* (Nutt.) Benth.

*Macranthera fuchsiioides Lecontei* (Torr.) Chapm. Fl. So. U. S. 297. 1860.

*Conradia Lecontei* (Torr.) Kuntze, Rev. Gen. 1: 459. 1891.

Though somewhat variable, when in flower the calyx-lobes are mostly entire, linear, relatively short as compared with corolla-tube [= *M. Lecontei*], later the corolla shrivels and

\* Eastern arm of Mobile River.

contracts, but persists, while the calyx-lobes continue to grow, becoming quite lobed and leaf-like [= *M. fuchsioides*].

Flowers, August to October. Fruit, September to October.

DISTRIBUTION: Borders of wet sandy thickets, in lower coastal pine belt and coast district, southern Georgia and northern Florida to southern Mississippi. Frequent in pine hill region of northwestern Florida, and in southern Alabama. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Probably Liberty Co., *LeConte*; Thomasville.

Florida: Quincy; Beverly (4681); Argyle; Crestview; Milligan (4595); Milton (4564); Bluff Springs.

Alabama: McRae (4641); Bay Minette (4553); Mobile; Whistler (4534); Theodore (4406, 4459, 4462).

Mississippi: Ocean Springs; Biloxi.

2. *AFZELIA* J. F. Gmel. *curante* L. Syst. Nat. ed. 13. 927. 1791

Stem closely pubescent, viscid; leaves pinnatisected, segments lanceolate or broader; calyx-lobes lanceolate; corolla deep yellow, pubescent without, its lobes ovate, 3-3.5 mm. wide; anthers lanose with yellow hairs on dorsal side of connective; capsule ovate, 6-7 mm. long, densely short tomentose with brown hairs; seeds winged. Plant low, 2-6 dm. tall, widely branched.

1. *A. pectinata*.

Stem sparingly pubescent, scarcely glandular; leaves pinnatifid, segments filiform; calyx-lobes linear; corolla pale yellow, glabrous without, its lobes lanceolate, 1.5-2 mm. wide; anthers glabrous; capsule inversely pyriform, 4-4.5 mm. long, glabrous; seeds wingless. Plant tall, 5-10 dm., virgately branched.

2. *A. cassioides*.

1. *AFZELIA PECTINATA* (Pursh) Kuntze, Rev. Gen. 1: 457. 1891

*Seymeria pectinata* Pursh, Fl. Am. Sept. 2: 737. 1814. "In South Carolina. *Catesby*—v. s. in *Herb. Sherard*."

*Seymeria Jacksoni* Ell. Sketch 2: 123. 1824. "Sent to me from Louisville, Ga., by Mr. Jackson." Type seen in the Elliott Herbarium at the Charleston Museum.

*Seymeria heterophylla* Raf. New Fl. Am. 2: 68. 1837. "Alabama and Georgia, my specimen from *Leconte*."

Flowers, August to September. Fruit, mid-September to October.

DISTRIBUTION: Dry sandy pineland in the coastal plain from

South Carolina to Mississippi, south in the Florida peninsula to Miami. Frequent in southern Georgia and southern Alabama and in Florida. Nearly restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

South Carolina: Aiken.

Georgia: Augusta; Thomson; Louisville; Brunswick (4845); Waycross (4780); Thomasville (4732); Leslie (4760); Columbus.

Florida: Jacksonville; South Jacksonville; San Pablo (4802); St. Augustine; Toco; Eustis; Palm Springs; Clarcona; Georgiana; Miami; Marco; Tampa; St. Marks (4705, 4715); Quincy; River Junction; Liberty Co.; Fort Gadsden (4686); Apalachicola (4674); Chipley (4645); Ponce de Leon (4656); Milligan (4585); Milton (4568); Santa Rosa Island.

Alabama: Auburn; Abbeville; Ozark; Florala (4630); Greenville; Wilcox Co.; Mobile Co.

Mississippi: Waynesboro.

2. *AFZELIA CASSIOIDES* (Walt.) J. F. Gmel. *curante* L. Syst. Nat. ed. 13. 927. 1791

*Anonymos cassioides* Walt. Fl. Carol. 171. 1788. No type locality given, presumably from Berkeley Co., South Carolina.

*Gerardia cassioides* (Walt.) Pers. Syn. 2: 154. 1807.

*Seymeria tenuifolia* Pursh, Fl. Am. Sept. 2: 737. 1814. New name for *Gerardia cassioides* (Walt.) Pers.

Flowers, September to mid-October. Fruit, October.

DISTRIBUTION: Moist to dry pineland, mostly sandy, in the coastal plain from North Carolina to Florida and Louisiana. Frequent in the Wilmington pine barrens, occurs also near Fayetteville, North Carolina, and occasional or frequent southward. Most abundant in flat pine woods of southern Georgia, northern Florida, and near the Gulf coast to Louisiana. In the Florida peninsula reaching Bradentown on the west coast. Mostly in the coastal plain, casually inland in northern Georgia, Alabama, and southeastern Tennessee.

PLANTS AND SPECIMENS EXAMINED:

North Carolina: Wilmington (4900, 4919); Fayetteville.

South Carolina: Columbia; Santee Canal; St. Johns; Cooper



River; Monks Corner (4878); Otranto (4872); Summerville; Charleston (4866); Beaufort.  
 Georgia: Thalmann (4809); Coffee Co.; Naylor (4743); Moultrie; Thomasville (4725); Leslie.  
 Florida: Jacksonville; St. Augustine; Bradentown; Tampa; Lake City; Monticello (4719); St. Marks (4713); Quincy; River Junction; Fort Gadsden (4691); Apalachicola (4678); Chipley (4649); Ponce de Leon (4653); Milligan (4588).  
 Alabama: Auburn; Abbeville; McRae (4639); Bay Minette (4552); Mobile Co.  
 Mississippi: Meridian; Fontainebleau; Ocean Springs; Biloxi; Nicholson.  
 Louisiana: Covington (4217); Hammond.

### 3. AUREOLARIA Raf. New Fl. Am. 2: 58. 1837

- Corolla glabrous without; calyx-lobes entire; seeds winged. Plants perennial, not glandular. **Aureolaria** (*sensu strictu*).  
 Capsule glabrous. Flowers evidently pediceled.  
 Stem glabrous, more or less glaucous.  
 Leaves glabrous beneath.  
 Stem quite glaucous. Bracts of a lanceolate type, some at least dentate like the leaves.  
 Capsule 15–20 mm. long. 1. *A. virginica*.  
 Stem slightly glaucous. Bracts of a spatulate type, entire.  
 Capsule about 12–15 mm. long. 2. *A. reticulata*.  
 Stem puberulent. Leaves puberulent beneath. Bracts of a spatulate type, entire. 3. *A. dispersa*.  
 Capsule rusty-pubescent. Plant pubescent throughout. Flowers very short-pediceled. 4. *A. villosa*.  
 Corolla pubescent without; calyx-lobes dentate to pectinate; seeds wingless. Plants annual, glandular. **Panctenis** (Raf.) subgenus nov.\*  
 Leaves and stem minutely pubescent or minutely glandular. Pedicels mostly over 10–12 mm. long, exceeding the calyx.  
 Leaves not sharply incised. Calyx-tube turbinate. Capsule ellipsoid.  
 Leaves and stem minutely and closely pubescent. Leaves deeply pinnatifid.  
 Stem-leaves mostly 3–6 cm. long.

---

\* *Gerardia* sect. *Pedicularioides* Benth. in Hook. Comp. Bot. Mag. 1: 205. 1835–6, if sectional names have full standing, has priority over *Panctenis* Raf. New Fl. Am. 2: 60. 1837.

- Pedicels mostly shorter than or equaling the bracts. 5. *A. pedicularia*.  
 Stem-leaves mostly less than 2 cm. long. Pedicels longer than the bracts. 6. *A. pedicularia caesariensis*.  
 Leaves and stem minutely glandular-pubescent. Leaves shallow-pinnatifid, those of the stem mostly 2-3 cm. long. 7. *A. pedicularia carolinensis*.  
 Leaves and stem densely glandular-pubescent. Pedicels mostly less than 10-12 mm. long, shorter than the calyx. Leaves pinnately lobed, lobes sharply pectinate. Calyx-tube hemispheric. Capsule broadly ovoid.  
 Stem-leaves all spreading. Flowering pedicel 5-10 mm. long. Flowers about 35 mm. long. Plant widely branched, uppermost leaves smaller, but not excessively reduced. 8. *A. pectinata*.  
 Stem-leaves, at least the upper, appressed-ascending. Flowering pedicel mostly less than 5 mm. long. Flowers about 40-45 mm. long. Plant virgately branched, uppermost leaves much reduced. 9. *A. pectinata floridana*.

1. *Aureolaria virginica* (L.) Pennell, comb. nov.

- Rhinanthus virginicus* L. Spec. Plant. 603. 1753. "Habitat in Virginia." Specimen in Gronovius' herbarium identified by Pursh. As specimen in Linnaean Herbarium bears handwriting of Linnaeus the younger, and was probably a later addition, I presume Gronovius' plant to be the type. For discussion see Kuntze, Rev. Gen. 1: 460. 1891.  
*Gerardia flava* L. Spec. Plant. 610. 1753. "Habitat in Virginia, Canada." Specimen in Linnaean Herbarium identified by Bentham in Hook. Comp. Bot. Mag. 1: 198. 1835-6.  
*Anonymos flava* (L.) Walt. Fl. Carol. 170. 1788. As to synonymy, not description, the latter probably applying to *Aureolaria villosa* Raf.  
*Gerardia lauca* Eddy in Med. Repos. N. Y. IIInd. Hexade, 5: 126. 1807. Plandome, Long Island. C. W. Eddy.  
*Gerardia quercifolia* Pursh. Fl. Am. Sept. 2: 423. 1814. "On the banks of rivers in rich shady places, Pennsylvania to Carolina."

*Aureolaria glauca* (Eddy) Raf. New Fl. Am. 2: 60. 1837.

*Dasystoma quercifolia* (Pursh.) Benth. in DC. Prodr. 10: 520. 1846.

*Dasystoma flava* (L.) Wood, Class Book. 529. 1861. As to synonymy, not description, the latter applying to *Aureolaria villosa* Raf.

*Gerardia virginica* (L.) Britton, Prelim. Catal. N. J. Pl. 40. 1888.

*Dasystoma virginica* (L.) Britton in Mem. Torrey Club 5: 295. 1894.

Flowers, in New Jersey, September.

DISTRIBUTION: Frequent on rich slopes, often rocky, in woodland inland, very rare in the Coastal Plain. On wooded slopes at a few points in southern New Jersey.

SPECIMENS EXAMINED:

New Jersey: New Egypt; Nesco; Fairton.

## 2. AUREOLARIA RETICULATA Raf. New Fl. Am. 2: 59. 1837

*Aureolaria reticulata* Raf. "Florida and Alabama." No type known to exist.

*Dasystoma bignoniiflora* Small in Bull. N. Y. Bot. Gard. 1: 285. 1899. "Collected by Dr. Burrows, at Tampa Bay, Florida, in 1834." Type seen in Herb. Columbia University.

Flowers, late-August to mid-October. Fruit, September to October.

DISTRIBUTION: Sandy ravines and moist woodland, both in calcareous and siliceous districts, in the coastal plain from North Carolina to central and western Florida. Apparently most frequent in calcareous region of northern and western Florida. Restricted to the coastal plain; possibly better considered a subspecies of *A. virginica* replacing that species in the southern coastal plain.

PLANTS AND SPECIMENS EXAMINED:

North Carolina: Fayetteville.

South Carolina: Santee Canal; St. Johns; Monks Corner (4875); Eding Island.

Georgia: Thomasville (4723); Leslie (4765).

Florida: Tampa Bay; Monticello (4720); Tallahassee (4696, 4698); River Junction; Marianna; Milton (4565, 4566).

3. **Aureolaria dispersa** (Small) Pennell, comb. nov.

*Dasystoma quercifolia intermedia* Benth. in DC. Prodr. 10: 520.

1846. No type locality given, nor type specimen known to exist. Description would indicate this species.

*Dasystoma dispersa* Small, Bull. Torrey Club 28: 452. 1901.

"Louisiana: Feliciana, *Carpenter*; type in the herbarium of Columbia University." Type seen in Herb. Columbia University.

*Gerardia dispersa* (Small) K. Schum. in Just's Bot. Jahresber.

29: 580. 1903.

Flowers, August to September. Fruit not seen.

DISTRIBUTION: Sandy thickets and oakland, frequent in coastal pine belt near the Gulf, southern Alabama to eastern Louisiana, reaching Wilkinson Co., Mississippi. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Alabama: Baldwin Co.; Crichton (4521); Hollander's Island (4504).

Mississippi: Ocean Springs; Biloxi (4384); Long Beach; Wilkinson Co.

Louisiana: Abita Springs (4117, 4245); Covington; Feliciana.

4. **AUREOLARIA VILLOSA** (Muhl.) Raf. New Fl. Am. 2: 59. 1837

*Aureolaria villosa* (Muhl.) Raf. No type locality given, nor type specimen known to exist. *Gerardia villosa* Muhl. Catal. 58, 1813, and *Gerardia heterophylla* Muhl. l. c. are treated as nomina subnuda.

*Dasystoma pubescens* Benth. in DC. Prodr. 10: 520. 1846. "In Americae sept. civitatibus orientalibus frequens."

This species has been commonly identified as *Gerardia flava*, but appears not to be *G. flava* L.

Flowers, late-May to mid-August. Fruit, late-July to October.

DISTRIBUTION: Widely distributed in the eastern United States, more common above the fall line. Frequent or occasional in sandy soil in the coastal plain from New Jersey to Louisiana. Not seen from the Florida peninsula. In New Jersey frequent in middle and Cape May districts, less so in the pine barrens.

## PLANTS AND SPECIMENS EXAMINED:

New Jersey: Spotswood; Farmingdale; Hornerstown; Medford; Locust Grove; Westville; Clarksboro; Swedesboro; Atco (3546); Hammonton; Cape May Court House (3986); Bennett; Cold Spring; Cape May.

Maryland: Chester own.

Virginia: Naucks (2471); Cape Henry; Franklin.

North Carolina: Wilmington.

South Carolina: Santee Canal; St. Johns; Bluffton; Aiken; Graniteville.

Georgia: Macon.

Florida: Jacksonville; Chattahoochee River.

Alabama: Ozark Evergreen.

Louisiana: Pearl River.

5. AUREOLARIA PEDICULARIA (L.) Raf. New Fl. Am. 2: 61. 1837

*Gerardia pedicularia* L. Sp. Pl. 611. 1753. "Habitat in Virginia, Canada."

*Anonymos pedicularia* (L.) Walt. Fl. Carol. 170. 1788. As to synonymy, probably not description.

*Panctenis pedicularia* (L.) Raf. New Fl. Am. 2: 61. 1837.

*Dasystoma pedicularia* (L.) Benth. in DC. Prodr. 10: 521. 1846.

Variable, the following subspecies local, and more or less sharply defined.

Flowers, mid-August to mid-September. Fruit, October, persisting through the winter.

DISTRIBUTION: Widely distributed and frequent in the northern states above the fall line. Rare in the coastal plain where mostly replaced by the following subspecies. Material seen nearly all from New Jersey, where it is rare or absent in middle district, somewhat more frequent in the pine barrens and evidently approaching the subspecies *caesariensis*. (Transitional specimens indicated by asterisk.)

## PLANTS AND SPECIMENS EXAMINED:

New Jersey: Middlesex Co.; Brindletown\*; Atsion\*; Hammonton\*.

Pennsylvania: Tinicum (3589).

6. *Aureolaria pedicularia caesariensis* Pennell, subsp. nov.

Annual. Stem 10 dm. tall, widely branching, minutely and closely pubescent, very sparingly glandular below. Leaves sessile, ovate-lanceolate, less than 2 cm. long, pinnatifid, segments irregularly crenate-dentate, equaling or longer than the width of the central portion of the lamina, minutely and closely pubescent. Pedicels slender, glandular, 15 mm. long, longer than the calyx, longer than, mostly twice exceeding, the bracts. Calyx-tube glandular with short-stalked glands, equaled by the dentate calyx-lobes. Corolla 35 mm. long, yellow. Capsule 10–12 mm. long, elliptic-ovoid, minutely glandular, surpassing the calyx-lobes.

Type, Atco, Camden Co., New Jersey, Sept. 7, 1911, *F. W. Pennell* 3545 in Herb. University of Pennsylvania.

Flowers, mid-August to mid-September. Fruit, October, persisting through the winter.

DISTRIBUTION: Dry sandy pine and oak woods, frequent in the pine barrens of New Jersey, where it mostly replaces the species.

PLANTS AND SPECIMENS EXAMINED:

New Jersey: East Plains; Bamber; Woodmansie; Taunton; Atco (3545, 3627); Middletown, Cape May Co.

7. *Aureolaria pedicularia carolinensis* Pennell, subsp. nov.

Annual. Stem 10 dm. tall, widely branching, minutely glandular-pubescent. Leaves sessile, ovate-lanceolate, 2–3 cm. long, pinnatifid-lobed, segments somewhat crenate, shorter than the width of the central portion of the lamina, minutely glandular-pubescent. Pedicels slender, glandular, 10–20 mm. long, longer than the calyx. Calyx-tube glandular with short-stalked glands, mostly exceeded by the incised-dentate calyx-lobes. Corolla 35 mm. long, yellow. Capsule 12 mm. long, elliptic-ovoid, minutely glandular, equaling or barely surpassing the calyx-lobes.

Type, savannahs near Mill Pond, Wilmington, North Carolina, June 23, 1909, *J. M. Macfarlane* in Herb. University of Pennsylvania.

Flowers, June to September. Fruit, October.

DISTRIBUTION: Dry sandy pine and oak woods, pine barrens of southeastern North Carolina, where it probably replaces the species.

PLANTS AND SPECIMEN EXAMINED:

North Carolina: Wilmington (4925) (*J. M. Macfarlane* in 1909; in 1911); "Southeastern North Carolina," *W. W. Ashe*.

8. *Aureolaria pectinata* (Nutt.) Pennell, comb. nov.

*Gerardia pedicularia pectinata* Nutt. Gen. Plant. N. Am. 2: 48.

1818. "HAB. In the sandy pine forests of Carolina and Georgia." No type in Herb. Acad. Nat. Sci. Philadelphia.

*Gerardia pectinata* (Nutt.) Benth. in Hook. Comp. Bot. Mag. 1: 206. 1835-6.

*Panctenis pectinata* (Nutt.) Raf. New Fl. Am. 2: 61. 1837.

*Dasystoma pectinata* (Nutt.) Benth. in DC. Prodr. 10: 52. 1846.

Very variable, as here understood, including a number of strains.

Flowers, July to September. Fruit, September to October.

DISTRIBUTION: Dry sandy pineland, especially hilly, in the coastal plain, South Carolina, through southern Georgia, pine hills of northwest Florida, to Alabama and Mississippi, locally frequent extending above the fall line. In some of its forms occurring throughout the Gulf and Lower Mississippi Valley states.

## PLANTS AND SPECIMENS EXAMINED:

South Carolina: Eutawville; Santee Canal; Monks Corner; Cooper River; Beaufort.

Georgia: Augusta; Thomson; Americus.

Florida: De Funiak Springs.

Alabama: Florala (4625); Flomaton; Prattville; Tensaw; Deer Park; Mobile; Spring Hill (4532).

Mississippi: Meridian; Jackson.

9. *Aureolaria pectinata floridana* Pennell, subsp. nov.

Annual. Stem about 10 dm. tall, much branched, glandular-villose. Branches virgate, ascending. Leaves sessile, ovate, those of the stem less than 2 cm. long, pinnatifid, segments pectinately toothed, glandular-villose; at least the upper leaves ascending or appressed to the stem or branches, the uppermost much reduced. Pedicels stout, 5 mm. long or less, shorter than the calyx, glandular-villose. Calyx-tube glandular-villose, much exceeded by the lanceolate, pectinate teeth. Corolla 40-45 (-50) mm. long, yellow, no purple markings within tube (in type specimens). Capsule 12-14 mm. long, broadly ovoid, glandular-pubescent, shorter than the calyx.

Type, Fort Gadsden, Franklin Co., Florida, Sept. 20, 1912, F. W. Pennell 4683, in Herb. University of Pennsylvania.

This may be *Gerardia pedicularia pectinata* Nutt., as the mention of short pedicels and very large flowers would suggest, but as *floridana* does not occur in South Carolina, though probably in the flat pine woods of southeastern Georgia, I retain the name for the prevalent species of the district cited. I have seen no old collections of *floridana* from Georgia.

Flowers, May to mid-October. Fruit, June to October.

DISTRIBUTION: Dry sandy pineland. Flat pine woods of Florida and southern Georgia, south to Polk Co., Florida; replacing the species.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Thomasville (4724).

Florida: Jacksonville; Pablo; St. Augustine; Eustis; Orange City; Lake Brantley; Polk Co.; Tampa; Marion Co.; Tallahassee; Fort Gadsden (4683); Apalachicola.

4. AGALINIS Raf. New Fl. Am. 2: 61. 1837

Perennial, from a running rootstock, glabrous throughout. Pedicels erect, 5-20 mm. long. Corolla slightly fleshy, pink, with darker spots, but no yellow lines within throat, pubescent without, pubescent within at base of upper lobes, 35-40 mm. long. Capsule globose, 5-6 mm. long. Seeds dark brown. [*Lini-foliae*.]

1. *A. linifolia*.

Annuals, fibrous rooted, in most at least the upper surface of the leaf scabrous. Pedicels ascending or spreading. Corolla membranous, purple or pink, mostly with darker spots and two yellow lines within throat. Capsule globose or ovoid. Corolla with lobes all spreading, pubescent within at base of upper lobes, more or less pubescent without.

Seeds dark brown. Plants darkening in drying. Calyx-tube not reticulate-venulose. Corolla purple or pink-purple. Flowers short- or long-pedicelled. [*Purpureae*.]

Leaves uniform, linear to filiform-subulate.

Inflorescence of normal racemes; pedicels less than 10 mm. long. Seed-coat with dark brown ribs, between these mostly paler and minutely reticulated.

Leaves and calyx-lobes obtuse to acutish. Anther-sacs obtuse to acutish at base. Plant fleshy, bushy-branched below, with elongated racemes above. Pedicels reaching 10 mm. long.

2. *A. maritima*.



Leaves and calyx-lobes acute to acuminate. Anther-sacs mucronate to minutely awned at base. Plants not fleshy, more uniformly branched. Pedicels less than 5 mm. long.

Corolla purple or pink-purple, 2 yellow lines and darker spots present. Plants dull-green or purplish, much darkening in drying.

Stem smooth or minutely scabrelous. Axillary fascicles slightly or not developed, if present shorter than leaves.

Corolla 20-35 mm. long, rose-purple.

Corolla 25-35 mm. long, on evident pedicels 2-5 mm. long. Stem sparingly scabrelous. Leaves linear, those of the stem 1.5-3.5 mm. broad. Calyx-lobes triangular-lanceolate to triangular-subulate.

3. *A. purpurea*.

Corolla 20-25 mm. long.

Leaves narrowly linear to almost filiform. Calyx-lobes triangular-subulate to subulate. Stem essentially smooth.

Stem-leaves narrowly linear to almost filiform, 1.5-3 cm. long, mostly longer than the internodes, mostly curling in drying. Branches mostly simple, ascending, virgate. Axillary fascicles relatively well

- developed. Pedicels 2-5 mm. long.
4. *A. virgata*.
- Stem-leaves 1-2.5 cm. long, mostly shorter than the internodes. More stiffly branched. Axillary fascicles scarcely or not developed. Flowers nearly sessile, on pedicels less than 2 mm. long.
- Stem-leaves narrowly-linear, thickened, 2-2.5 cm. long, scarcely or not curling in drying.
5. *A. pinetorum*.
- Stem - leaves almost filiform, 1-2 cm. long, curling in drying.
6. *A. delicatula*.
- Corolla 15-18 mm. long, pink-purple. Flowers nearly sessile, on pedicels less than 2 mm. long.
7. *A. Harperi*.
- Stem scabrous. Axillary fascicles abundantly developed, mostly equaling leaves.
8. *A. fasciculata*.
- Corolla lavender-pink, no yellow lines nor darker spots evident, 15-18 mm. long. Plants bright-green, little darkening in drying. Stem smooth or nearly so. Axillary fascicles abundantly developed.
9. *A. georgiana*.
- Inflorescence of short or much broken racemes, some flowers, by slower or arrested

- growth of stem apex, frequently appearing terminal. Pedicels over 5 mm. long. Stem scabrous. Anther-sacs evidently awned at base, densely woolly over entire surface. Seed-coat with dark brown ribs, areas between these more or less hexagonal, pale and not reticulated. Stem-leaves opposite, axillary fascicles abundantly developed. Pedicels 15-40 mm. long. Corolla 25-30 mm. long. 10. *A. pulchella*.
- Stem glabrous, or essentially so. Anther-sacs acute to minutely mucronate-awned at base, pubescent, glabrous over much of dorsal surface. Seed-coat with dark-brown ribs, areas between these elongated, scarcely paler, and scarcely or not reticulated.
- Stem-leaves alternate, narrowly linear to filiform, semi-fleshy, 1-2 cm. long. Axillary fascicles abundantly developed. Pedicels 10-35 mm. long. Corolla 25-30 mm. long. 11. *A. filifolia*.
- Stem-leaves opposite. Axillary fascicles scarcely developed or none.
- Stem-leaves narrowly linear to filiform-setaceous, 1.5 cm. or longer. Seed-coat with fine parallel ridges, areas between these narrow.
- Pedicels less than 30 mm. long. Corolla mostly 20-30 mm. long, rose-purple. Seed-coat with very fine parallel ridges. Plants densely and repeatedly branched, usually with filiform to setaceous leaves.
- Pedicels 10-30 mm. long, longer than the bracts. Corolla mostly 20-25 mm. long. Leaves narrowly linear to filiform. Flowers not conspicuously "terminal." 12. *A. Holmiana*.

Pedicels less than 10 mm.

long, mostly shorter  
than the bracts.

Corolla mostly

25-30 mm. long.

Leaves filiform-seta-

ceous. Flowers con-

spicuously "ter-

минаl."

13. *A. setacea*.

Pedicels, at least in fruit,

25-50 mm. long, very

slender, four to five times

exceeding the bracts. Co-

rolla 15-18 mm. long,

pink-purple. Seed-coat

with fewer and slightly

heavier ridges. Plant

very widely and laxly

branched, the lower

branches widely ascend-

ing. Leaves narrowly

linear to filiform.

14. *A. laxa*.

Stem-leaves filiform-subulate, 1

cm. long or less, much shorter

than internodes. Seed-coat

with broader areas. Pedicels

5-15 mm. long. Calyx-lobes

acute, 0.5 mm. long. Corolla

15-20 mm. long. Stem terete,

grooved, not angular.

15. *A. oligophylla*.

Leaves dimorphic, basal oval-ovate, spreading,

cauline, minute, scale-like, appressed. Pedicels

less than 5 mm. long, many flowers appearing to

terminate minute axillary branches. Calyx-

lobes minute, subulate. Corolla 15-20 mm. long,

pink-purple. Stem mostly 4-angled, often pubes-

cent at base.

16. *A. aphylla*.

Seeds yellowish brown. Plants light green, not darken-

ing in drying. Corolla pink. Flowers on

pedicels longer than bracts. Calyx-tube reticu-

late-venulose, lobes minute, callose. [*Erectae*.]

Stem-leaves 2-2.5 cm. long, filiform-linear, acute.

Corolla 15 mm. long, lobes more or less emar-

ginate, 2 yellow lines and purple spots evident.

Stem-leaves 1-1.5 cm. long.

17. *A. decemloba*.

Corolla 15-20 mm. long, lobes more or less

emarginate, 2 yellow lines and purple spots

well developed. Pedicels slender. Leaves

nearly filiform, acutish or acute. Plant

relatively lax.

18. *A. tenella*.

- Corolla 12-16 mm. long, lobes rounded to truncate, 2 yellow lines and purple spots slightly developed or suppressed. Pedicels stouter. Leaves linear, widening upward, obtusish to obtuse. Plant strict, stiff. 19. *A. erecta*.
- Corolla bilabiate, two upper lobes ascending over stamens and style, glabrous within at base of upper lobes. Seeds dark brown. [*Tenuifoliae*.]
- Corolla pubescent without, 2 upper lobes two-thirds length of lower 3, minutely ciliate, concave-arched. Pedicels, if exceeding the bracts, less than twice their length. Corolla 10-18 mm. long, purple. Leaves linear, those of the stem often broadly so. 20. *A. tenuifolia*.
- Corolla glabrous without, 2 upper lobes less than one-half length of lower 3, conspicuously ciliate, flattened. Pedicels at least three times the length of the bracts.
- Leaves filiform, those of the stem 1.5-2 cm. long. Pedicels 15-30 mm. long. Corolla rose-pink, 15-18 mm. long. Plant reaching 8 dm. tall, widely much branched. 21. *A. divaricata*.
- Leaves minute, scale-like, those of the stem less than .2 cm. long. Pedicels 5-10 mm. long. Corolla lavender-pink, 10-13 mm. long. Plant less than 5 dm. tall, sparingly very laxly branched. 22. *A. filicaulis*.

I. AGALINIS LINIFOLIA (Nutt.) Britton in Britt. & Br., Ill. Fl. ed. 2. 3: 209. 1913

*Gerardia linifolia* Nutt. Gen. Pl. N. Am. 2: 47. 1818. "HAB. From Wilmington, North Carolina to Florida." Type, labeled "Carolina," seen in Herb. Acad. Nat. Sci. Philadelphia.

*Agalinis perennis* Raf. New Fl. Am. 2: 63. 1837. "My specimen is from Florida."

Flowers, mid-August to October. Fruit, September to November.

DISTRIBUTION: Wet pineland, and especially margins of ponds, in the coastal plain. Ellendale, Delaware; from Wilmington, North Carolina to southern Florida and near the Gulf coast to Louisiana. Most abundant in flat pine woods of southern Georgia and Florida, less frequent in the west Florida pine hills and in the Altamaha grit region of Georgia, occasional north of the Savannah River or west of Florida. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Delaware: Ellendale.

North Carolina: Wilmington; Brunswick Co.

South Carolina: Hartsville; Santee Canal; Eutawville.

Georgia: Everett; Brunswick (4823); Waycross (4790); Naylor (4745); Thomasville (4729); Sumter Co.; Columbus.

Florida: Tisomia (4813); Baldwin; Jacksonville (4794); St. Nicholas; San Pablo (4807); Cutler; Homestead; Camp Longview; Fort Myers; St. Petersburg; St. Marks (4714); Quincy; Fort Gadsden (4690); Apalachicola; Chipley (4648, 4666); Ponce de Leon (4654); Paxton (4600).

Alabama: Elmore.

Mississippi: Biloxi.

Louisiana: Hammond.

2. AGALINIS MARITIMA Raf. in Med. Repos. New York. IIInd.

hex. 5: 361. 1808 (as *Gerardia*); New Fl. Am. 2: 62. 1837

*Gerardia maritima* Raf. "Found in the islands of Egg-Harbour, in New Jersey." No type known to exist.

*Gerardia purpurea crassifolia* Pursh Fl. Am. Sept. 2: 422. 1814.

"In salt marshes, near New York."

*Gerardia maritima grandiflora* Benth. in Hook. Comp. Bot. Mag. 1: 208. 1835-6. "Texas, *Drummond*, 1st Coll."

*Gerardia spiciflora* Engelm. Bost. Jour. Nat. Hist. 5: 227. 1845.

New name for *Gerardia maritima grandiflora* Benth.

*Gerardia maritima major* Chapm. Fl. So. U. S. 300. 1860.

"Brackish marshes, Apalachicola, Florida." There are several collections of Chapman's of this species, but none, indicated as type, has been seen.

Flowers, April (on the Gulf coast) to mid-September. Fruit, August to September.

DISTRIBUTION: Salt marshes, along the Atlantic and Gulf coasts from New Jersey to Louisiana, locally frequent. Extending to Maine northward, in the south to Texas, Yucatan, Cuba and the Bahamas. Along the Gulf coast and Atlantic coast in Florida a much branched plant, reaching 6 dm. tall, leaves and calyxlobes more liable to be acutish, pedicels mostly exceeding the bracts, corolla reaching 20 mm. long, and anther-sacs lanose-

pubescent, northward becoming progressively smaller and simpler, till a plant of but 0.5–1.0 dm. tall in Maine, leaves and calyx-lobes constantly obtuse, pedicels shorter than the bracts, corolla scarcely 15 mm. long, and anther-sacs nearly glabrous.

PLANTS AND SPECIMENS EXAMINED:

New Jersey: Keasbey; Long Beach; Forked River; Barnegat Pier; Beach Haven; Atlantic City; Ventnor; Mays Landing; Ocean City; Palermo; Sea Isle; Peermont; Cape May Court House (2604); Holly Beach; Five-mile Beach; Cold Spring (2157); Cape May.

Delaware: —, *Bernhardi*.

Maryland: Ocean City.

Virginia: Parksley; Walnut Point.

North Carolina: Ocracoke Island; Beaufort.

Florida: Titusville; Eau Gallie; Marco; Sanibel; Pine Island; Tampa; Long Key, Pinellas Co.; Hernando Co.; St. Marks (4702); Apalachicola.

Alabama: Mobile Co.

Mississippi: Ship Island.

Louisiana: Breton Island.

3. *AGALINIS PURPUREA* (L.) Pennell, Bull. Torrey Club 40:  
126. 1913

*Gerardia purpurea* L. Sp. Pl. 610. 1753. "Habitat in Virginia, Canada."

*Anonymos purpurea* (L.) Walt. Fl. Carol. 170. 1788.

*Gerardia purpurea grandiflora* Benth. in Hook. Comp. Bot. Mag. 1: 208. 1835–6. "New Jersey."

*Agalinis palustris* Raf. New Fl. Am. 2: 62. 1837. "Near marshes. . . . From New England to Carolina."

*Agalinis longifolia* Raf. New Fl. Am. 2: 62. 1836. "Near streams New Jersey to Virginia."

(?) *Agalinis corymbosa* Raf. New Fl. Am. 2: 63. 1837. "Carolina and Florida."

Flowers, mid-July to mid-October. Fruit, late-September to October.

DISTRIBUTION: Moist sandy soil, nearly throughout the coastal

plain. Abundant from New Jersey to South Carolina, in New Jersey in the middle district and coastal strip, absent from the New Jersey, probably also from the Wilmington, N. C., pine barrens; southward abundant near the coast in Georgia, extending to the Florida Keys, of occasional occurrence in the Altamaha grit region of Georgia, more common inland. Westward occasional, especially near the Gulf coast, and probably frequent north of the pine belts. A characteristic plant of coastal regions, edges of salt marshes. Widely distributed in the eastern United States, most abundant in the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

- New Jersey: Keasbey; South River; Spotswood; Keyport; Farmingdale; New Egypt; Burlington; Delair; Griffith's Swamp; Kirkwood; South Westville; Clarksboro; Mickleton; Swedesboro; Deal; Belmar; Chadwick; Toms River; Seaside Park; Forked River; Waretown; Barnegat Pier; Cox's; Manahawken; Absecon; Atlantic City; Ventnor; Ocean City; Ocean City Junction; Avalon (4004); Wildwood; Middletown; Cape May Court House (2602, 2603); Bennett; Cape May.
- Pennsylvania: Tinicum (3598).
- Delaware: Porter; Ellendale; Rehoboth.
- Maryland: Kent Island; Abbey's Island; Laurel; Lanham; Buena Vista (2640); College Park; Hyattsville; Bladensburg.
- District of Columbia: Anacostia; Terra Cotta (2678, 2679); Holmead Swamp; District Line (2639); Washington.
- Virginia: Alexander Island (2671); Arlington (2672); Alexandria; Four-mile Run; Seven Pines (4946); Smith's Island; Norfolk; Virginia Beach; Munden.
- North Carolina: Weldon (4948); Rocky Mount (4932); Wilmington (4914, 4927); Southport.
- South Carolina: Ebenezer; Santee Canal; Monks Corner (4876); Otranto (4869); Charleston; Yemassee (4850, 4854); Bluffton; Aiken.
- Georgia: Thomson; Thalmann (4811); Waycross (4784); Fitzgerald; Naylor (4746, 4753); Thomasville (4735A); Cordele (4769); De Soto (4758); Leslie (4767).
- Florida: Jacksonville (4799); San Pablo (4806); Miami; Black



Point; Homestead; Camp Longview; Long Prairie; Bull Key; Cape Florida; Fort Myers; Lakeland; St. Petersburg; Lake City; St. Marks (4703); Apalachicola.

Alabama: Mobile.

Mississippi: Ora; Long Beach; Pass Christian (4357).

4. *AGALINIS VIRGATA* Raf. New Fl. Am. 2: 62. 1837

*Agalinis virgata* Raf. "Glades of Pine woods in South New Jersey near Mullica Hill, &c." No type known to exist.

*Gerardia racemulosa* Pennell Torrey 11: 15. 1911. "Type.—Parkdale, Camden Co., N. J., F. W. Pennell 2692 Coll. Sept. 27, 1910, in Herb. Acad. Nat. Sci. of Phila."

Flowers, September to mid-October. Fruit, mid-September to October.

DISTRIBUTION: In the coastal plain, New Jersey, and North and South Carolina. In New Jersey restricted to the pine barrens where frequent; frequent or common in the Wilmington pine barrens; frequent or occasional in pineland in South Carolina. Replaces *A. purpurea* in typical pine barrens. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

New Jersey: Hornerstown; Forked River; Pasadena; Atsion; Hammonton; Egg Harbor City; Parkdale (2692, 2694, 3584, 3626, 3808); Winslow Junction (in 1908).

North Carolina: Newbern; Wilmington (4902, 4921).

South Carolina: Monks Corner (4877); Eutawville; Charleston.

5. *Agalinis pinetorum* Pennell, sp. nov.

Annual. Plant 6–8 dm. tall, much branched, branches ascending, long and slender. Stem slightly angular, glabrous or nearly so. Leaves opposite, stiffly spreading, narrowly linear, thickened, very scabrous on the upper surface, those of the stem 2–2.5 cm. long. Axillary fascicles scarcely or not developed. Racemes of 8–14 mostly opposite flowers. Pedicels very short, in flower 2 mm. long or less, hardly longer in fruit. Calyx-lobes triangular-subulate, 1–1.5 mm. long. Corolla 20–25 mm. long, pubescent without, pubescent within at base of upper lobes, rose-purple, 2 yellow lines and purple spots within throat below; lobes all spread-

ing, rounded to emarginate, ciliate. Filaments lanose; anther-sacs oblong, lanose, minutely mucronate-awned at base, 2 mm. long. Style filiform 6–10 mm. long. Capsule globose, 5 mm. long. Seeds not seen.

Type, St. Marks, Wakulla Co., Florida, Sept. 26, 1912, *F. W. Pennell* 4708, in Herb. University of Pennsylvania.

Flowers, late-September to October.

DISTRIBUTION: Moist soil, in pineland, southern Georgia and northern Florida. Probably common in Altamaha grit region, frequent through flat pine woods of northern Florida, west to the Apalachicola River. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Waycross (4781, 4791); Douglas (4775); Naylor (4750); Thomasville (4734, 4738); Cordele (4770, 4771, 4773).

Florida: Jacksonville (4795); St. Marks (4708); Fort Gadsden (4688); Apalachicola.

6. *Agalinis delicatula* Pennell, sp. nov.

Annual. Plant 6–8 dm. tall, branched, branches long and very slender. Stem angular, glabrous. Leaves opposite, spreading, almost filiform, scabrous on the upper surface, those of the stem 1–2 cm. long. Axillary fascicles scarcely developed. Racemes of 8–12 mostly opposite flowers. Pedicels very short, in flower 2 mm. long or less. Calyx-lobes subulate, 1.5–2 mm. long. Corolla 20 mm. long, sparingly pubescent without, pubescent within at base of upper lobes, rose-purple, 2 yellow lines but (in this collection) no purple spots within throat below, lobes all spreading, rounded to emarginate, minutely ciliate. Filaments lanose; anther-sacs oblong, lanose, mucronate-awned at base, 1.5 mm. long. Style filiform. Fruit not seen.

Type, Ponce de Leon, Holmes Co., Florida, Sept. 17, 1912, *F. W. Pennell* 4661 in Herb. University of Pennsylvania.

Nearest to *A. pinetorum* of which this may possibly prove a form, but the plants seen appeared strikingly distinct, and occurred in a different region, west of the known range of that species.

Flowers, mid-September to October.

DISTRIBUTION: Most sandy pineland, western Florida. Possibly frequent in the west Florida pine hills. Restricted to the coastal plain. Type only seen.

7. *AGALINIS HARPERI* Pennell in Small, Flora of Miami, 167.  
1913

*Agalinis Harperi* Pennell. "Type.—St. Marks, Wakulla County, Florida. F. W. Pennell, 4707 coll. September 25, 1912" in Herb. University of Pennsylvania.

Annual. Plant 4–8 dm. tall, relatively sparingly branched. Stem slightly angular, glabrous or nearly so. Leaves opposite, rather stiffly spreading, narrowly linear, scabrous on the upper surface, those of the stem 2–3.5 cm. long. Axillary fascicles scarcely or not developed. Racemes of 8–20 mostly opposite flowers. Pedicels very short, in flower less than 2 mm. long, hardly longer in fruit. Calyx-lobes triangular-lanceolate to triangular-subulate, 1 mm. long or less. Corolla 15–18 mm. long, pubescent without, pubescent at base of upper lobes within, pink-purple, 2 yellow lines within throat below, small purple spots mostly along these; lobes all spreading, rounded to truncate, ciliate. Filaments lanose; anther-sacs oblong, lanose, acute at base, 1.5 mm. long. Capsule 4–5 mm. long. Seeds reticulated with dark brown ridges, areas between these relatively dark, with finer cross lines.

Flowers, mid-September to mid-October. Fruit, October.

DISTRIBUTION: Moist sandy pineland, borders of salt marsh, etc. Flat pine woods of southern Georgia, south through the Florida peninsula. Apparently most frequent in the Everglades. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Thalmann (4810); Thomasville (4726).

Florida: Camp Longview; St. Marks (4701, 4707, 4711).

8. *AGALINIS FASCICULATA* (Ell.) Raf. New Fl. Am. 2: 63. 1837

*Gerardia fasciculata* Ell. Sketch 2: 115. 1824. "Grows principally in lands subject to occasional inundation from the ocean—on Eding's Island near Beaufort very common."

Type seen in the Elliott Herbarium at the Charleston Museum.

*Gerardia purpurea fasciculata* (Ell.) Chapm. Fl. So. U. S. 300. 1860.

Flowers, August to October. Fruit, September to October.

DISTRIBUTION: Moist to dry sandy, loam, or clay soil; depressions among sand-dunes of beach, edges of salt marsh, or loam soil

in limestone districts, etc.; especially in old fields, almost the only *Agalinis* to be met with in cultivated soil. In the coastal plain, Norfolk Co., Virginia (where perhaps introduced); South Carolina to Louisiana, mostly near the coast. Common near the coast in South Carolina and Georgia, and apparently through most of the Florida peninsula. Apparently absent or rare in Altamaha grit region, west Florida pine hills, or inland from the coast in Alabama. In clay soil in Georgia north of the Altamaha grit. Near the coast westward to Louisiana. Abundant in alluvial districts near the lower Mississippi River, and in the hill country of West Feliciana Parish. Extending westward to Texas, and north through the lower Mississippi Valley. Casually introduced on ballast at Philadelphia.

PLANTS AND SPECIMENS EXAMINED:

Virginia: Northwest.

South Carolina: Santee Canal; St. Johns; Otranto (4868); Sullivan's Island (4860); Charleston (4863); Edisto Island; Aiken; Yemassee (4849); Beaufort; Hilton Head; Bluffton; Goat Island.

Georgia: Brunswick (4818); Cumberland Island; Waycross (4792); Naylor (4747, 4751); Valdosta (4740); Thomasville (4735); Cordele (4755, 4772); Leslie (4761, 4766).

Florida: Jacksonville (4793); St. Augustine; Orange City; Eustis; Minneola; Clarcona; Killarney; Merritt's Island; Fort Lauderdale; Miami, Alapattah; Cocoanut Grove; Homestead; Biscayne Bay; Big Pine Key; Sanibel; Polk Co.; Tampa; St. Petersburg; Fort King; Gainesville; Lake City; Monticello (4718); St. Marks (4706, 4717); Tallahassee (4695, 4697); River Junction (4669); Apalachicola (4675, 4680).

Alabama: Mobile; Cedar Point.

Mississippi: Ocean Springs; Biloxi (4370); Pass Christian (4356); Natchez.

Louisiana: Mandeville; Covington; Amite City; Hammond; Slaughter (4267); Baines (4276); Catalpa (4303, 4304, 4330).

9. *Agalinis georgiana* (C. L. Boynton) Pennell, comb. nov.

*Gerardia georgiana* C. L. Boynton in Biltm. Bot. Stud. 1: 148. 1902. "In the pine barrens near Cordele, Dooly County,

Georgia, in September, 1901. . . . in moist sandy soil in pine barrens. . . . The type specimens are deposited in the Biltmore Herbarium." Type, collected Sept. 18, 1901, seen in the Biltmore Herbarium.

Flowers, mid- to late-September. Fruit, late-September to October.

DISTRIBUTION: Dry sandy or clay soil, in pineland. Southern Georgia, southern Alabama, and northern Florida. Apparently occasional in flat pine woods of southern Georgia and northern Florida; near Cordele, Georgia; frequent in pine hills of western Florida and southeastern Alabama. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Valdosta (4739); Thomasville (4728); Dooly Co.

Florida: Fort Gadsden (4693); Chipley (4665); Ponce de Leon (4662); Milligan (4586).

Alabama: McRae (4609); Florala (4629, 4632).

10. *Agalinis pulchella* Pennell, sp. nov.

Annual. Plant 6–10 dm. tall, widely branching. Stem angular, scabrous. Leaves spreading, linear, scabrous on the upper surface, those of the stem opposite, 2–3 cm. long. Axillary fascicles conspicuously developed, but mostly shorter than the leaves. Racemes of 4–6 mostly alternate flowers, uppermost one, by arresting of stem-apex, often suggesting a terminal flower. Pedicels slender, in flower 15–30 mm., in fruit 25–40 mm. long, much longer than the bracts. Calyx-lobes minute, less than .5 mm. long, subulate. Corolla 25–30 mm. long, minutely pubescent without, pubescent within at base of upper lobes, rose-purple, 2 yellow lines and relatively large purple spots within throat below; lobes all spreading (upper much reflexed), notched at apex, ciliate. Filaments lanose; anther-sacs ovate, evidently short-awned, densely woolly over entire surface, 3 mm. long. Style slender, 10–20 mm. long. Capsule globose, 5–6 mm. long. Seeds reticulated, with dark-brown ridges, areas between these more or less broadly hexagonal, pale, not finely reticulated.

Type, Ponce de Leon, Holmes Co., Florida, Sept. 17, 1912, *F. W. Pennell* 4658, in Herb. University of Pennsylvania.

Flowers, September. Fruit, October.

DISTRIBUTION: Dry open, sandy pineland, southern Georgia, and northern Florida, westward to Louisiana. Frequent in the Altamaha grit region of Georgia, the flat pine woods southward to the Gulf coast in northern Florida, through the pine hills of western Florida and southeastern Alabama, and in Mobile Co., Alabama. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Waycross (4779); Douglas (4776); Moultrie; Thomasville (4731); Cordele.  
Florida: Gadsden Co.; Fort Gadsden (4692); Chipley (4650, 4663); Ponce de Leon (4658); Milligan (4587).  
Alabama: McRae (4642); Theodore (4427, 4452, 4454, 4455, 4493, 4515).

11. *AGALINIS FILIFOLIA* (Nutt.) Raf. New Fl. Am. 2: 65. 1837

*Gerardia filifolia* Nutt. Gen. Pl. N. Am. 2: 48. 1818. "HAB. In West Florida. Dr. Baldwin." No type in Herb. Acad. Nat. Sci. Philadelphia.

Flowers, September to early-October. Fruit, October.

DISTRIBUTION: Rather dry, sandy pineland, southern Georgia and Florida. Frequent or common in flat pine woods of southern Georgia and northern Florida, south through the Florida peninsula to Miami, west to Apalachicola, and along the coast to Santa Rosa Island, possibly reaching extreme southern Alabama. Plant from Santa Rosa Island, remarkably fleshy, possibly in brackish situation.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Sunbury; Brunswick (4821, 4828); Waycross (4785); Naylor (4752); Valdosta (4741).  
Florida: Jacksonville (4800); South Jacksonville; St. Nicholas; San Pablo (4803); Mayport; Pablo Beach; St. Augustine; Clarcona; Tillman; Miami; Manatee; Fort Gadsden (4694); Apalachicola (4671, 4673); St. Vincent; Santa Rosa Island.  
Alabama: —, *Gates* (probably really from Florida.)

12. *Agalinis Holmiana* (Greene) Pennell, comb. nov.

*Gerardia Holmiana* Greene, Pittonia 4: 52. 1899. "Plentiful in open pine and oak groves along Michigan Avenue south of

the Soldiers' Home grounds near Brookland, D. C., collected by Mr. Holm and the writer, 20 Oct., 1898." No specimen of this date seen, but one in Herb. N. Y. Bot. Gard., of Dr. Greene's collecting, from Brookland, D. C., dated Oct. 16, 1898, may stand as the type.

Flowers, late-August to mid-October. Fruit, mid-September to October.

DISTRIBUTION: Dry sandy pineland. Long Island to Florida and Alabama; irregularly distributed. Common in the pine barrens of New Jersey, sparingly in the middle district of the same state; common on the Potomac formation between Baltimore and Washington; common in Wilmington pine barrens of southeastern North Carolina, and probably so near the coast to Charleston, South Carolina; inland probably in the fall line sand hills through South Carolina and Georgia, apparently into Alabama; at Tampa, Florida. Rather narrower-leaved and more setaceous in true pine barrens. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

New Jersey: South River; Spotswood; Freehold; Tomlin; Franklinville; Pasadena; Woodmansie; Jackson; Atco (3544, 3628); Malaga; Egg Harbor City; Absecon.

Maryland: Glen Burnie; Riverdale; Lanham; Cherry Grove (2644); Sligo Mill Road (2657); Oxon Hill.

District of Columbia: Takoma (2655); Lamond (2656); Terra Cotta (2680); Brookland (2662, 2669); Washington.

North Carolina: Newbern; Wilmington (4904, 4923, 4929); Fayetteville.

South Carolina: Columbia; Charleston (4864); Aiken.

Georgia: Augusta; Burke Co.; Butler.

Florida: Tampa.

Alabama: —, *Meisner*(?).

13. AGALINIS SETACEA (Walt.) Raf. New Fl. Am. 2: 64. 1837

*Anonymos setacea* Walt. Fl. Carol. 170. 1788. No type locality given, presumably should be from South Carolina, but apparently from farther west. Type in the British Museum identified by Dr. A. B. Rendle as agreeing with my number 4757.

*Gerardia setacea* (Walt.) J. F. Gmel. *curante* L. Syst. Nat. ed. 13. 927. 1791.

*Gerardia Plukenetii* Ell. Sketch 2: 114. 1824. "Grows in wet spongy soils, very common between the Oakmulgee and Chatahouche Rivers." Type seen in the Elliott Herbarium at the Charleston Museum. Statement of habitat probably due to confusion with *Agalinis pinetorum* Pennell.

*Agalinis Plukenetii* (Ell.) Raf. New Fl. Am. 2: 63. 1837.

*Agalinis setacea* (Walt.) Raf. As to synonymy, not description, the latter probably applying to *A. erecta* (Walt.) Pennell.

*Gerardia filifolia Gatesii* Benth. in DC. Prodr. 10: 518. 1846.

"In Alabama (Gates!)." Type in the Kew Herbarium, identified, from fragment sent me, as this species.

Flowers, mid-September to October. Fruit, not seen, probably late-October to November.

DISTRIBUTION: Dry open sandy pineland. In the coastal plain from western Georgia and northern Florida to eastern Mississippi. Frequent from Sumter County, Georgia, westward through the pine hills of western Florida and southern Alabama to southeastern Mississippi, abundant toward the coast. One record from the Florida Keys,—Pine Key, *Blodgett*—likely due to mixing of labels. Occasional above the fall line in northern Alabama and northern Georgia.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Cobb (4757); Cuthbert.

Florida: Apalachicola (4672); Milligan (4583, 4584); Milton (4569, 4570).

Alabama: Auburn; Wright's Mill; Tuskegee; Clayton; Florala (4623); Bay Minette (4561); Mobile; Spring Hill (4524); Crichton (4523); Theodore (4426, 4457, 4461, 4517).

Mississippi: Meridian; Biloxi (4382).

14. *Agalinis laxa* Pennell, sp. nov.

Annual. Plant 6–10 dm. tall, widely and very laxly branched. Stem nearly terete below, slightly angled above, glabrous. Leaves spreading, opposite nearly throughout, narrowly linear to nearly filiform, nearly glabrous, those of the stem 2–3 cm. long. Axillary fascicles scarcely or not developed. Racemes of 3–8 mostly



opposite flowers. Pedicels in flower 15–30 mm., in fruit 25–50 mm. long, 4–5 times exceeding the bracts. Calyx-lobes minute, less than 0.5 mm. long, acute. Corolla 15–18 mm. long, minutely pubescent without, pubescent with pink hairs within at base of upper lobes, pink-purple, 2 yellow lines, and small purple spots especially along these, within throat; lobes all spreading, rounded, ciliate with pink hairs. Filaments sparingly lanose, upper shorter pair nearly glabrous; anther-sacs ovate, mucronate at base, pale, lanose, 1.5 mm. long. Style 4–5 mm. long. Capsule globose-ovoid, 4–5 mm. long. Seeds nearly black, small for the genus, with relatively heavy longitudinal and connecting ridges.

Type, Brunswick, Glynn Co., Georgia, Oct. 10, 1912, *F. W. Pennell* 4824, in Herb. University of Pennsylvania.

Flowers, late-September to October. Fruit, late-October.

DISTRIBUTION: Dry sandy pineland, river sand hills and old dunes, near the coast, South Carolina to Florida. Frequent from Brunswick, Georgia to Jacksonville, Florida; no specimens seen from farther south on Atlantic Coast. One specimen from Hernando County, Florida. Probably frequent on river sand hills in lower Georgia and northeastern Florida. Restricted to the coastal plain.

#### PLANTS AND SPECIMENS EXAMINED:

South Carolina: Monks Corner (4880).

Georgia: Brunswick (4824); Bonnyman (4778); Waycross (4783).

Florida: Jacksonville; San Pablo (4805); Pablo Beach (4801); Hernando Co.

#### 15. *Agalinis oligophylla* Pennell, nom. nov.

*Gerardia Plukenetii microphylla* A. Gray, Syn. Fl. N. Amer. II. 1: 293. 1878. "Louisiana, *Drummond*, *Hale*. Keys of Florida, *Blodgett*, &c." Louisiana material to be counted as typical. I have not seen the type. For Florida citation see under *Agalinis setacea* (Walt.) Raf.

*Gerardia microphylla* (A. Gray) Small, Fl. S. E. U. S. 1077. 1338. 1903; not *Agalinis microphylla* Raf. New Fl. Am. 2: 65. 1837.

DISTRIBUTION: Probably moist pineland, southern Louisiana, east of the Mississippi River at Jackson, East Feliciana Parish, more frequent westward. One old specimen seen labeled, probably incorrectly, as from Alabama. Restricted to the coastal plain.

SPECIMENS EXAMINED:

(?) Alabama: —, *J. Torrey*.

Louisiana: Jackson.

16. AGALINIS APHYLLA (Nutt.) Raf. New Fl. Am. 2: 65. 1837

*Gerardia aphylla* Nutt. Gen. Plant. N. Am. 2: 47. 1818.

"HAB. From North Carolina to Florida, where it was first detected by Dr. Baldwyn." Type seen in Herb. Acad. Nat. Sci. Philadelphia; accompanied by fruiting plant of *Agalinis erecta* (Walt.) Pennell.

*Gerardia aphylla grandiflora* Benth.\* in Hook. Comp. Bot. Mag. 1: 174. 1835-6. "Jacksonville." *Drummond*.

*Agalinis microphylla* Raf. New Fl. Am. 2: 65. 1837. "In Florida, collected by Leconte (Collins herb.)."

Flowers, mid-September to early November. Fruit, October to November.

DISTRIBUTION: Moist sandy pineland near the coast, North Carolina to Florida and Louisiana. Occasional from the Wilmington pine barrens southward, through North and South Carolina; most abundant in the flat pine woods of southern Georgia and northern Florida, frequent in the Altamaha grit region of Georgia; the west Florida pine hills; less frequent westward to Louisiana. Apparently does not occur in the Florida peninsula. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

North Carolina: Wilmington.

South Carolina: Santee Canal.

Georgia: Thalmann (4808); Brunswick (4819); Waycross (4789); Coffee Co.; Naylor (4748).

Florida: Tisonia (4814); Jacksonville (4798); South Jacksonville; St. Marks (4712); Fort Gadsden (4682); Apalachicola (4676); Chipley (4647, 4664); Point Washington; Ponce de Leon (4655); Milligan.

Alabama: Mobile; Spring Hill.

---

\* Dr. N. E. Brown has kindly consulted the Bentham correspondence at Kew, which makes it evident that this author is responsible for the treatment of *Gerardia* in Hooker's account of the plants of Drummond's collections. Also it seems evident that the paper containing this was not published until early in 1836.

Mississippi: Ocean Springs; Biloxi; Pass Christian; Nicholson.  
Louisiana: Abita Springs.

17. **Agalinis decemloba** (Greene) Pennell, comb. nov.

*Gerardia decemloba* Greene, Pittonia 4: 51. 1899. "Plant not uncommon about Brookland, D. C., inhabiting grassy knolls and hillsides bordering on pine woods." A specimen in Herb. N. Y. Bot. Gard. collected by Dr. E. L. Greene at Brookland, D. C., in Oct. 1898, may stand as the type.

Flowers, late-August to mid-September. Fruit, late-September to October.

DISTRIBUTION: Dry soil, light sand or clay, in the coastal plain in Kent Co., Delaware, frequent on Potomac formation near Washington, D. C., and probably occasional south to North Carolina. Occasional inland in the Piedmont region from Pennsylvania to North Carolina. Apparently has a fragmentary distribution, but not well understood.

PLANTS AND SPECIMENS EXAMINED:

Delaware: Felton.

Maryland: Buena Vista (2641); Lanham; Forest Glen; Silver Springs.

District of Columbia: Takoma Park (2654); Brookland (2660, 2661, 2677, 4950).

18. **Agalinis tenella** Pennell, sp. nov.

Annual. Plant 5-8 dm. tall, laxly branched, branches slender. Stem angled, glabrous throughout. Leaves spreading, linear-filiform to nearly filiform, acute to acute, opposite nearly throughout, those of the stem 1-1.5 (-2) cm. long. Axillary fascicles none. Racemes of 8-12 mostly opposite flowers. Pedicels slender, in flower 8-20 mm. long, in fruit reaching 25 mm. long. Calyx-tube reticulate-venulose; lobes minute, apiculate. Corolla 15-20 mm. long, minutely pubescent without, pubescent with pink hairs within at base of upper lobes, rose-pink, 2 yellow lines and small diffused purple spots within throat; lobes all spreading, more or less emarginate, ciliate. Filaments lanose especially toward apex; anther-sacs lanceolate, mucronate at base, 2 mm. long, villose with pink hairs 1.5 mm. long. Style slender, 5-8 mm. long. Capsule globose-ovoid, much flattened at base, 4 mm. long. Seeds narrow, yellowish-brown.

Type, Thomasville, Thomas Co., Georgia, Sept. 28, 1912, *F. W. Pennell* 4727, in Herb. University of Pennsylvania.

Flowers, mid-September to mid-October. Fruit, October.

DISTRIBUTION: Dry sandy pineland, in the coastal plain from South Carolina to Florida and Alabama. Occasional in lower South Carolina; most abundant in Altamaha grit region of Georgia; less frequent in upper edge of flat pine woods of southern Georgia entering north central Florida at Gadsden County, and in middle Georgia entering east central Alabama at Lee County. In the Altamaha grit region common, mostly replacing *A. erecta*. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

South Carolina: Otranto (4871); Eutawville; Yemassee (4853).  
Georgia: Waycross (4782, 4786); Naylor (4744); Douglas (4777);  
Moultrie; Thomasville (4727); Cordele (4768, 4774); Cobb  
(4756); Leslie (4764).

Florida: Chattahoochie.

Alabama: Auburn.

19. *AGALINIS ERECTA* (Walt.) Pennell, in Small, Fl. Florida Keys,  
133. 1913

*Anonymos erecta* Walt. Fl. Carol. 170. 1788. No type locality given, presumably from Berkeley County, South Carolina. There is no type in the Walter collection in the British Museum. Of the species occurring in Berkeley County, those which best answer the description are *Agalinis Holmiana* (Greene) Pennell, *Agalinis laxa* Pennell, and the following. Of these the first two are long-pediceled, and very lax, the bracts in the first are scarcely conspicuously shorter than the peduncles, moreover both are relatively infrequent. The third species, the following, in its strict erect habit, its pedicels not conspicuously long, but with bracts conspicuously shorter, seems best to fit Walter's description; moreover, it appears to be much the most abundant species of the district.

*Gerardia erecta* (Walt.) J. F. Gmel. *curante* Linn. Syst. Nat. ed. 13, 928. 1791.

*Gerardia setacea parvifolia* Benth.\* in Hook. Comp. Bot. Mag. 1: 174. 1835-6. "Jacksonville." *Drummond*.

*Agalinis obtusifolia* Raf. New Fl. Am. 2: 64. 1837. "West Tennessee, Alabama and Florida." Description in greater part or entirely of this species, though the Tennessee specimen could hardly belong here.

*Gerardia parvifolia* (Benth.) Chapm. Fl. So. U. S. 300. 1860.

*Agalinis parvifolia* (Benth.) Small in Britt. & Br. Ill. Fl. ed. 2. 3: 212. 1913.

Flowers, early-September to mid-October. Fruit, October.

DISTRIBUTION: Moist to dry sandy pinelands, in the coastal plain from North Carolina to Florida and Louisiana. Occasional or frequent in eastern North Carolina; common in the Wilmington pine barrens, and southward near the coast to Charleston, South Carolina; less frequent in the Altamaha grit region and inland in Georgia; common through the flat pine woods of Florida, south through the peninsula and on the Florida Keys; common westward through the pine hills of west Florida, decreasing inland in southeastern Alabama; and common near the Gulf coast westward to eastern Louisiana. Restricted to the coastal plain.

#### PLANTS AND SPECIMENS EXAMINED:

North Carolina: Rocky Mount (4933); Wilmington (4910, 4915, 4926); Brunswick Co.

South Carolina: Monks Corner (4879); Otranto (4870).

Georgia: Sunbury; Coffee Co.; Moultrie; Thomasville (4733); Leslie.

Florida: Tisonia (4815); Jacksonville (4797); San Pablo (4804); Green Cove Springs; St. Augustine; Big Pine Key; Marco; Fort Myers; Polk Co.; Tampa; Lake City; St. Marks (4710); Fort Gadsden (4685); Apalachicola; Chipley (4646, 4667); Ponce de Leon (4659); Paxton (4640); De Funiak Springs; Milligan (4596).

Alabama: McRae (4614); Florala (4634); Bay Minette (4548, 4562); Mobile; Spring Hill (4526); Theodore (4428, 4453); Hollander's Island (4503).

Mississippi: Waynesboro; Ocean Springs; Biloxi (4399); Manuel; Gulfport; Long Beach; Pass Christian (4363); Nicholson.

---

\* See footnote on page 433.

Louisiana: Pearl River; Bayou Lacombe; Abita Springs (4226, 4227, 4231).

20. *AGALINIS TENUIFOLIA* (Vahl.) Raf. New Fl. Am. 2: 64.

1837

*Gerardia tenuifolia* Vahl, Symb. Bot. 3: 79. 1794. "Habitat in America septentrionali." Type in Herb. Universitetets botaniske Museum, Copenhagen, Denmark, collected by Von Rohren, and said to be probably from Philadelphia, is identified by Dr. C. H. Ostenfeld as agreeing with material (my number 2681) sent from eastern Pennsylvania.

Flowers, mid-August to mid-October.

DISTRIBUTION: Moist to dry sand or loam, deciduous or mixed woodland, widely distributed and common through the eastern United States above the fall line, in the coastal plain locally frequent, especially in limestone districts. In New Jersey occasional in the middle and Cape May districts, occasional southward near the fall line; in Sumter County, Georgia; frequent in red loam soil in central northern Florida; in limestone in southeastern Alabama and western Florida; and in alluvial soil in southern Alabama and Louisiana. A larger plant southward.

PLANTS AND SPECIMENS EXAMINED:

New Jersey: New Egypt; Camden; Clarksboro; Swedesboro; Bennett; Cold Spring.

Delaware: Van Dyke.

Maryland: Ardwick (2645); Oxon Hill.

District of Columbia: Brookland (2658).

Georgia: De Soto (4759); Leslie.

Florida: Monticello (4721); Tallahassee (4699); Chattahoochie;

River Junction (4670); Aspalaga; Paxton (4601).

Alabama: Chapel Hill, Covington Co. (4619); Florala (4597, 4606); Cocoa; Mobile; Crichton (4522).

Mississippi: Meridian; Jackson.

Louisiana: Mandeville(?); Catalpa.

21. *Agalinis divaricata* (Chapm.) Pennell, comb. nov.

*Gerardia divaricata* Chapm. Fl. So. U. S. 299. Mar. 26, 1860.

"Low sandy pine barrens." No type indicated, but abundant

material of this species collected and distributed by the describer.

*Gerardia Mettauerei* Wood, Class Book 530, Dec. 1, 1860. "Wet sandy places, Middle Fla. (Dr. Mettauerei)." Type seen in Herb. Columbia University.

*Gerardia Mettauerei clausa* Wood, Class Book 530, Dec. 1, 1860. "With the others," i. e. the species and *G. Mettauerei nuda* Chapm.

Flowers, September to October. Fruit not seen.

DISTRIBUTION: Dry sandy pineland, western Florida and adjacent southeastern Alabama. Abundant through the west Florida pine hills, eastward through the middle Florida flat woods to Apalachee Bay. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Florida: St. Marks (4716); near Tallahassee; Gadsden Co.; Carrabelle; Fort Gadsden (4684, 4687); Apalachicola (4679); Chipley (4644, 4668); Ponce de Leon (4657); Portland; Milligan (4593); Milton (4572).

Alabama: Florala (4622, 4624, 4627, 4633).

22. *Agalinis filicaulis* (Benth.) Pennell, comb. nov.

*Gerardia aphylla filicaulis* Benth.\* in Hook. Comp. Bot. Mag. 1: 174. 1835. "Jacksonville." Drummond.

*Gerardia filicaulis* (Benth.) Chapm. Fl. So. U. S. 299. Mar. 26, 1860.

*Gerardia Mettauerei nuda* Wood, Class Book 530, Dec. 1, 1860.

Under *Gerardia nuda* Wood (1870), "Middle Fl. (Dr. Mettauerei, 1855)."

*Gerardia nuda* Wood, Am. Bot. and Flor. 231. 1870.

Flowers, mid-September to early November. Fruit, October to November.

DISTRIBUTION: Moist grassy sandy pineland, in the coastal plain from southern Georgia and northern Florida to eastern Louisiana. Frequent in the flat pine woods of southern Georgia and northern Florida; occasional or rare in the Altamaha grit region; frequent in the pine hills of western Florida and adjacent

---

\* See footnote on page 433.

southeastern Alabama; westward near the coast to southern Mississippi and probably eastern Louisiana. Restricted to the coastal plain.

PLANTS AND SPECIMENS EXAMINED:

Georgia: Waycross (4788); Naylor (4749); Tyty.

Florida: Jacksonville (4796); St. Marks (4709); Fort Gadsden (4689); Apalachicola (4677); Ponce de Leon (4660); Paxton (4643); De Funiak Springs; Milligan (4594).

Alabama: McRae (4608); Florala (4626).

Mississippi: Ocean Springs; Biloxi; Pass Christian.

Louisiana: "New Orleans." *T. Drummond*.

UNIVERSITY OF PENNSYLVANIA.